HOLDEN

RA Rodeo
Dual Fuel

Owner's Handbook

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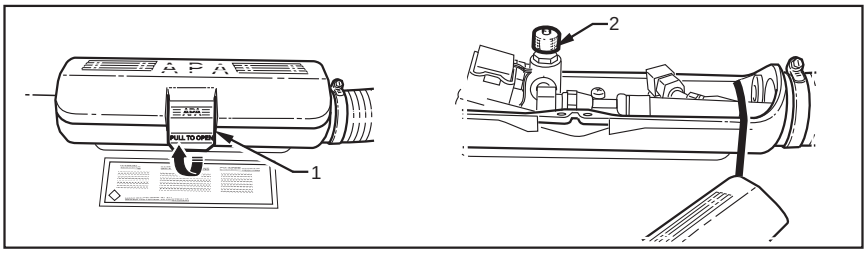
Emergency Procedures

LPG has an odour that enables any leaks in the vehicle LPG system to be detected, should this odour be detected in or around the vehicle or in the event of an accident, fire, or other abnormal circumstance:

1. **Turn the vehicle ignition OFF.**
2. **Open valve box cover (1) and turn the manual service valve (2) on LPG cylinder to OFF (turning in a clockwise direction) See diagram below.**
3. **Contact nearest authorised IMPCO LPG repairer or Holden dealer for advice.**



WARNINGS:

- **LPG is heavier than air and if not dispersed tends to collect in low-lying areas.**
- **Accident or Fire**

  Call the emergency fire services to the scene and keep people away from the vehicle.

- **Whilst Filling**

  Ensure that there is no gas leakage. If a leak is detected whilst filling the vehicle stop filling the vehicle, notify the filling station operator of a potential problem with the pump. If the odour still persists when disconnected, Carry out the Emergency Procedures steps I and 2. Select petrol operation with the fuel selector switch and take the vehicle to nearest authorised LPG repairer for advice. **NOTE:** If frost is present do not touch the area until the frost has dissipated.

- **Suspected Gas Leak**

  Carry out the Emergency Procedures steps I through 3. Once the steps have been followed and the odour is no longer present, select petrol operation with the fuel selector switch and take vehicle to nearest authorised LPG repairer for advice.

Preface

It is Important to understand that the engine in your 'Dual Fuel' Holden vehicle will always start on petrol and if LPG is selected on the dual fuel control switch the vehicle will automatically transfer over to LPG when the engine has warmed up sufficiently.

The Holden Dual Fuel System has been designed to comply with the relevant Australian Standard AS/NZS 1425:2003.

It is recommended to advise your insurance company that your new vehicle operates on both petrol and LPG as failure to do so may invalidate your insurance policy. Your vehicle is required to display the LPG decal on both the front and rear number plates.

The information contained in this manual is designed to cover the Holden Dual Fuel System. Information provided was accurate at the time this manual was approved for printing. Holden Ltd., reserves the right subject to all applicable laws and regulations to change specifications at any time without incurring any liability what so ever.

VEHICLE OPERATION

New Engine Run-In Procedure

It is recommended that the engine of your vehicle be run in on petrol for 1000km before running the vehicle on LPG.

Starting the Engine

There are no special requirements for starting your Dual Fuel engine with either fuel selected, always follow starting directions as indicated in the vehicle Owner's Handbook.

Changing Fuels and Starting

Fuel selection may be done at any time by simply changing the switch to the desired fuel.

Fuel Selector Switch

The switch has two positions and a fuel operation indicator lamp, which will change colour to indicate which fuel mode the vehicle is currently running on. The lamp colours are as follows:

Red	Petrol operation
Amber	Transition state, currently transferring to selected fuel
Green	LPG operation

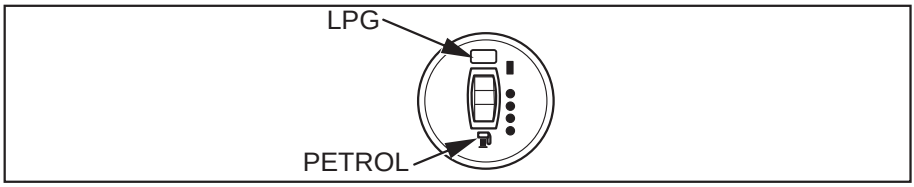
PETROL OPERATION:

When the switch is in the 'Petrol' position, the engine will operate on unleaded petrol. The engine will start on petrol, and if switched from LPG, will automatically make the transition to petrol operation.

NOTE: When switching from petrol to LPG, there is a time delay (approx 5 seconds) to allow the LPG system to prime. Also, the system will not change from petrol to LPG at idle. The engine RPM must be over 1,200 to change to LPG.

LPG OPERATION:

When the switch is in the 'LPG' position, the engine will operate on LPG fuel. The engine will start and run on petrol until required conditions are reached, at which time the system will automatically transfer to LPG operation. ***When operating on LPG, during certain higher RPM and load conditions, the system will electronically switch to petrol.***



FUEL INDICATION

Petrol Fuel Level Indication

The fuel gauge on the instrument panel will show petrol tank contents.

LPG Fuel Level Indication

The 4 lights in the change over switch indicate fuel level:

4 lights illuminated	full
3 lights illuminated	¾ full
2 lights illuminated	½ full
1 light illuminated	¼ full
1 light flashing	LPG reserve
1 light flashing and beeper sounding	Out of LPG and the system has changed back to petrol operation. To stop the system beeping, change fuel selection switch to petrol. ***NOTE:*** *Check Manual Service Valve located on LPG tank to ensure this is not closed.*
A few quick beeps	Indicates system has automatically changed back to petrol after sensing high load conditions for an extended period. The system will return back to LPG automatically when ready.

Petrol Usage

Holden recommends: The petrol tank of your vehicle should always have at least a ¼ of a tank of petrol.

When the engine is started with LPG selected, the engine will start and run on petrol until required conditions are reached, at which time the system will automatically begin the change to LPG operation.

WARNING:

Operating the vehicle with 'NO' petrol in the fuel tank may cause the vehicle to stall unrecoverably under high RPM/load conditions and possibly cause damage to the petrol fuel pump .

IMPORTANT:

If the vehicle runs out of petrol it will not start, eliminating the ability to changeover to LPG operation.

REFUELLING

Vehicles are fitted with a gas cylinder of approximately 85 litres, having a useable capacity of approximately 68 litres.

LPG or petrol may be added, regardless of the fuel selected.

NOTE: Observe the filling instructions and warnings displayed at the filling station.

Petrol Refuelling

Refuel the vehicle in the normal manner. Refer to the vehicle Owner's handbook.

LPG Refuelling

- Switch off the engine.
- Remove the LPG filler cap.
- Connect LPG filler nozzle and fully squeeze and hold trigger.
- Release the trigger when it shuts off. The AFL (Automatic Fill Limiter) shuts off the LPG flow when your vehicle's LPG cylinder is 80% full: this is to allow for liquid expansion.
- Disconnect the LPG filler nozzle.
- Screw the LPG filler cap back on.

VEHICLE STORAGE

If the vehicle is to be stored for a prolonged period, turn off the Manual Service Valve, located on the LPG cylinder, refer to Emergency Procedures, Step 2.

TOWING CAPACITIES

The maximum towing capacity is 1600kg.

RADIO OPERATION

Vehicles fitted with Dual Fuel may show reduced radio reception at times.

SERVICE AND MAINTENANCE

Scheduled Maintenance

All service and repair work must be performed by a properly trained specialist. If the repair work involves opening the high-pressure LPG lines or associated components to the atmosphere, this should also be carried out by an authorised LPG technician and the work must be carried out to Australian Standard AS/NZS1425:2003.

The following coupons cover additional service requirements for Holden dual fuel vehicles.

State / Territory Regulations

Different states/territories may have additional service requirements. The additional work should be carried out and noted on the service coupons.

LPG Cylinder

The LPG cylinder must be removed and pressure tested by an authorised LPG cylinder test centre once every 10 years from the original test date stamped on a plate attached to the cylinder.

LPG Service Coupons

3,000km or 3 months service.

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ All mounting points for tightness

Date: ___ /___ /___ Kms _____

Service time 0.5 hours. Servicing Dealer:

_____

10,000km or 6 months service

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

LPG Service Coupons

20,000km or 12 months service

High-pressure leak check including the following:

- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ Replace LPG vapour filter and 'O'rings.

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

30,000km or 18 months service

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

LPG Service Coupons

40,000km or 24 months service

High-pressure leak check including the following:

- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ Replace LPG vapour filter and 'O'rings.

Date: ___ / ___ / ___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

50,000km or 30 months service

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation

Date: ___ / ___ / ___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

LPG Service Coupons

60,000km or 36 months service

High-pressure leak check including the following:

- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ Replace LPG vapour filter and ‘O’rings.

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

70,000km or 42 months service

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

LPG Service Coupons

80,000km or 48 months service

- ☐ High-pressure leak check including the following:
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ Replace LPG vapour filter and ‘O’rings.

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

90,000km or 54 months service

- ☐ High-pressure leak check including the following:
- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation

Date: ___ /___ /___ Kms _____

Service time 0.4 hours. Servicing Dealer:

_____

LPG Service Coupons

100,000km or 60 months service

High-pressure leak check including the following:

- ☐ Converter and lock-off
- ☐ All service line connections
- ☐ Filler valve
- ☐ LPG cylinder connections
- ☐ Fuel selector operation
- ☐ Replace LPG vapour filter and ‘O’rings.
- ☐ Inspect and service the front LPG Solenoid Valve

Note: The front LPG liquid filter is in the front LPG solenoid valve, replace 'O' rings and filter element

Date: ___ /___ /___ Kms _____

Service time 0.8 hours. Servicing Dealer:

_____

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Refer to your Holden Dealer for further information.

Please note that all information, illustrations and specifications in this Handbook are based on the latest production information available at the time of printing.
Holden reserves the right to make any changes at any time without notice and without incurring any obligation.

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